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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,206	07/24/2003	Harry Israel Ringermacher	120631-1	4236

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT	PAPER NUMBER
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2855

NOTIFICATION DATE	DELIVERY MODE
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11/26/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/627,206	Applicant(s) RINGERMACHER ET AL.	
	Examiner Gail Verbitsky	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-22, 28 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-22, 28, 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In view of arguments set forth by applicant in the appeal brief filed on August 25, 2008, PROSECUTION IS HEREBY REOPENED.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below: ___/Hezron Williams/

Supervisory Patent Examiner, Art Unit 2856_____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-20, 30 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Front Flash thermal imaging characterization of continuous fiber ceramic

Art Unit: 2855

composites. Article by Deemer et al. Jan, 25, 1999 [hereinafter Article 1] in view of Dennewitz (U.S. 3675074)

Article 1 discloses in Fig. 1 a thermography IR imaging device wherein a thermal pulse is applied with a photographic flash lamps heating an object/ sample, an IR camera configured to capture plurality of images/ frames, a shutter electronics (logic control) including: dual timing, TTL and Flash bank (actively quenching means) configured to shut the flash lamps and thus, to actively cool them. It is inherent, that the lamps are **off** for some period of time, and **on** for some (other) period/ duration of time.

Although it is known in the art that any device should have an initial control to initiate an action (i.e., power on/ off), Article 1 does not explicitly teach a control signal T2, in combination with the remaining limitations of claims 15-20 and 24. Article 1 does not explicitly teach to quench the lamp so as to control the lamp duration.

Dennewitz discloses an active quenching device to quench/ control the duration of a flash 1 by receiving a control signal generated by an IC/ control circuit comparator circuit (timing generator) 14, 16 and reversing state of a Schmitt trigger (switch) 13 to disable a bipolar transistor 4 (a combination of the Schmitt trigger and the bipolar transistor 4 is acting as an active quench) and to terminate the flash by reversing (disabling/ opening) the switch in response to a control signal (T2) sent to the Schmitt trigger/ switch 13, the flash 1 stays quenched/ off for a duration of time (col. 2, line 60) while the timing generator 14, 16 maintains the transistor 4 closed (col. 2, lines 65-68). When an igniting pulse and voltage (lamp trigger signal T1) are applied to the flash 1 by means of a timing generator 14, 16 by reversing (closing) the switch 13 (in response to an initial control signal T0), it starts emitting energy and causes current through the resistor 5 and the interval starts (time duration) when the flash emits light (col. 3, line 42) and thus activated (in response to T0 and T1). When the flash duration persists for a time (time duration) long enough, the comparator (timing generator) 14, 16 again assumes a second state, wherein the Schmitt trigger 19 will be reversed (T2) again and disables/opens the transistor 4, and the flash energy ceases (quenching is activated). Therefore, the timing generator 14, 16 is producing an initial control signal (T0) when the flash 1 does receive a current flow and does emit the energy, and a second control signal (T2) when the timing generator 14, 16 reverses the state of the Schmitt trigger and the transistor 4 is disabled/ opened and the current is not allowed to flow through

Art Unit: 2855

the flash 1 and the flash 1 does not emits energy (state of quenching) (col. 1, lines 63-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the logic control/ timing generator, disclosed by Article 1, so as to have a control having timing duration control so as to control the flash lamp, as taught by Dennewitz, in order to prevent it from overheating and provide a proper operation so as to prolong it's life by allowing it to cool, as very well known in the art.

Claims 21-22 and 28 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Article 1 and Dennewitz as applied to claims 15-20 and 24 above, and further in view of INTEGRATED GATE-COMMUTATED THYRISTORS. Article by Carroll et al. [hereinafter Article 11].

Article 1 and Dennewitz disclose the device as stated above in paragraph 2.

They do not explicitly teach that the switch is a power semiconductor switch/ an insulated gate bipolar transistor.

Article 11 teaches to use a power semiconductor switch such as IGCT or MOSFET or IGBT since they have very good performance in power and temperature cycling.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the switching device disclosed by Article 1 and Dennewitz with a switching device, as taught by Article 11, because power semiconductors known as IGCT have high speed and reliability, as already suggested by Article 11, and thus high performance ensuring a high accuracy of cooling the illuminating device.

Response to Arguments

Applicant's arguments filed 06/26/2008 have been fully considered but they are not persuasive. However, the Examiner repeats the FINAL rejection and provides more

Art Unit: 2855

explanation of her interpretation of Dennewitz since it appeared from the arguments that the Applicant misinterprets the Examiner's rejection.

Please note, the Applicant has never defined the "active" quench as something different from what is described by the references. In the Examiner's interpretation, the fact that the device (actively) turn on/ off the lamp, could be considered as an "active" quench unless otherwise defined by the Applicant in the claims.

With respect to Dennewitz: Applicant states that Dennewitz does not teach a timing generator configured to supply the control signal T2 and that the duration control in Dennewitz is determined by reflection for the return signal from the illuminated object. Applicant states that Dennewitz uses a photosensitive element to detect a portion of the light reflected from the object to form a control signal and that the quench time is determined by the reflection time as opposed to the instant invention. This argument is not persuasive because:

- A) the arguments with respect to using reflection/ photosensitive element is irrelevant: if the reference includes an additional structure (feature) not required by Applicant's invention, it must be noted that the reference discloses the invention as claimed. The fact that it discloses additional structure (feature) not claimed by Applicant is irrelevant.
- B) the entire system that controls duration in Dennewitz is a timing generator because it does the same function that the timing generator claimed by Applicant, and because Applicant does not claim any feature that would make the timing generator of the instant invention different from the one described in the prior art references.
- C) Applicant states that the transistors in Dennewitz do not function to control the duration because the flash itself fulfill this function (function of the timing generator). This argument is not persuasive because the combination of elements of Dennewitz (as explained in the rejections) including transistors, does control duration.

Applicant states that the quench in Dennewitz is passive, not active because the duration is passively controlled based on reflection time for the return signal. Applicant

Art Unit: 2855

states that this is opposed to the instant invention wherein, in claim 15. Applicant claims that “the quenching control scheme ...creates a completely new synergy, namely, control of flash duration independent of the flash itself”. This argument is not persuasive because this limitation has been claimed neither in claim 15 nor in other claims.

Applicant only names the quench as an “active quench” never claiming any particular features (i.e., admission of coolant, etc.). It is the claims that define the claimed invention, and it is claims, not specification that are anticipated or unpatentable.

Constant v. Advanced Micro-Devices, Inc., 7 USPQ2d 1064.

Even in claim 16 when the Applicant states that the “active quench... is configured to allow a current... in response to the initial control signal”, the active quench is not defined, and “allow to” is not a positive statement, therefore,

Applicant: A) has never positively claims this limitation (see: “configured to allow”, and

B) it is not clear if this current is an active quench itself or could it be interpreted that this current is an operational current that could be admitted to the lamp in a final stage of the quench in order to start the lamp, since the Applicant has never states/claims that **the initial signal T0 activates the active quench so as the quenching current is admitted to the lamp.**

Since the Applicant does not define the active quench in the claims, the Examiner, in the broadest reasonable interpretation considers that any quench that is performed by any intention/ initiation/ control is an active quench signal. In Dennewitz, the quench is initiated by opening/ closing (reversing the state) of switches to allow the lamp to quench by deactivation of the lamp.

With respect to Deemer/ Article I: Applicant states that Deemer does not show a need of an active quenching.

This argument is not persuasive because Deemer teaches to cool the flash by actively shutting it off.

With respect to Article II: see arguments above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571/ 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ina et al. U.S. 20020081111A1 teach in paragraph [0028] quenching a flash or timing the flash (control flash duration).

Yamada U.S. 4021698 teaches quenching a flash to watch (control) the flash duration.

Adams et al. U.S. 4831410 teach quenching a flash to control flash duration.

EP 000773469A1 teach automatically quenching a flash to control the flash duration.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

*Gail Verbitsky
Primary Patent Examiner, TC 2800*

October 24, 2008

/Gail Verbitsky/
Primary Examiner, Art Unit 2855

Application/Control Number: 10/627,206
Art Unit: 2855

Page 9